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IN THE CLAIMS:

1. A method of optimizing a Vickrey auction transaction to maximize revenue and profit to the seller, by withholding supply based on a market-derived reserve price calculated from buyer's bids.

5 2. The method of claim 1, comprising the steps of

- establishing a system for recording auction parameters and calculating an optimum selling price and a communications network for announcing the auction and collecting bids
- sorting received bids
- 10 -processing bids to determine the optimum selling price
- selecting the winning bids and notifying bidders of whether they won or lost based upon the calculated optimum selling price.

3. The method of claim 2 further comprising the steps of determining and recording the auction parameters, including:

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- the item(s) being offered;
 - whether at market bids will be accepted;
 - whether there is an announced reserve price, and if so, what it is;
 - whether there is an unannounced reserve price, and if so, what it is;
 - whether bids should have a minimum quantity, and if so, what it is;
 - 20 - whether bids should have a maximum quantity, and if so, what it is;
 - whether a prorationing scheme should be used, and if so, what it is;
 - whether to announce the quantity available for sale;

-the procedure for submitting bids, whether bids may withdrawn prior to the close of the auction, and the procedure for withdrawing bids;

- delivery requirements; and,

- the closing date and time of the auction.

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4. The method of claim 2 further comprising the steps of:

- announcing the selected auction parameters; and,

- collecting and recording bids containing: the identity of the bidder; quantity bid for; pricing information; and whether bidder will accept partial quantity, according to the procedures selected and announced; and,

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- rejecting nonconforming bids and noting any bid withdrawals.

5. The method of claim 2 further comprising the step of sorting and consolidating all at market bids and all price bids other than those less than the reserve price, wherein the price bids are ranked in descending price order.

6. The method of claim 3 further comprising the steps of:

- announcing the selected auction parameters; and,

- collecting and recording bids containing: the identity of the bidder; quantity bid for; pricing information; and whether bidder will accept partial quantity, according to the procedures selected and announced; and,

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- rejecting nonconforming bids and noting any bid withdrawals.

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7. The method of claim 3 further comprising the step of sorting and consolidating all at market bids and all price bids other than those less than the reserve price, wherein the price bids are ranked in descending price order.

8. The method of claim 4 further comprising the step of sorting and consolidating all at market bids and all price bids other than those less than the reserve price, wherein the price bids are ranked in descending price order.

5 9. The method of claim 6 further comprising the step of sorting and consolidating all at market bids and all price bids other than those less than the reserve price, wherein the price bids are ranked in descending price order.

10. The method of claim 2 further comprising the steps of processing bids to determine the selling price including the steps of:

- calculating a starting revenue by multiplying the highest price bid times the number of items wanted;
- calculating a comparative revenue by multiplying the next highest price bid times the number of items wanted by both the highest and next highest bidders;
- iteratively performing calculations with each bid in descending price order to determine the revenue realized by the next lowest price times the sum of the items required by the bidder of the next lowest price and all preceding higher bidders;
- determining from the calculated revenue figures the optimum selling price and number of units to be sold to realize the maximum revenue.

11. The method of claim 3 further comprising the steps of processing bids to determine the selling price including the steps of:

- calculating a starting revenue by multiplying the highest price bid times the number of items wanted;
- calculating a comparative revenue by multiplying the next highest price bid

times the number of items wanted by both the highest and next highest bidders;

- iteratively performing calculations with each bid in descending price order to determine the revenue realized by the next lowest price times the sum of the items required by the bidder of the next lowest price and all preceding higher bidders;

5 - determining from the calculated revenue figures the optimum selling price and number of units to be sold to realize the maximum revenue.

12. The method of claim 4 further comprising the steps of processing bids to determine the selling price including the steps of:

10 -calculating a starting revenue by multiplying the highest price bid times the number of items wanted;

 - calculating a comparative revenue by multiplying the next highest price bid times the number of items wanted by both the highest and next highest bidders;

15 - iteratively performing calculations with each bid in descending price order to determine the revenue realized by the next lowest price times the sum of the items required by the bidder of the next lowest price and all preceding higher bidders;

 - determining from the calculated revenue figures the optimum selling price and number of units to be sold to realize the maximum revenue.

13. The method of claim 5 further comprising the steps of processing consolidated bids to determine the selling price including the steps of:

20 -calculating a starting revenue by multiplying the highest price bid times the number of items wanted;

 - calculating a comparative revenue by multiplying the next highest price bid

times the number of items wanted by both the highest and next highest bidders;

- iteratively performing calculations with each bid in descending price order to determine the revenue realized by the next lowest price times the sum of the items required by the bidder of the next lowest price and all preceding higher bidders;

5 - determining from the calculated revenue figures the optimum selling price and number of units to be sold to realize the maximum revenue.

14. The method of claim 6 further comprising the steps of processing consolidated bids to determine the selling price including the steps of:

-calculating a starting revenue by multiplying the highest price bid times the number of items wanted;

- calculating a comparative revenue by multiplying the next highest price bid times the number of items wanted by both the highest and next highest bidders;

- iteratively performing calculations with each bid in descending price order to determine the revenue realized by the next lowest price times the sum of the items required by the bidder of the next lowest price and all preceding higher bidders;

15 - determining from the calculated revenue figures the optimum selling price and number of units to be sold to realize the maximum revenue.

15. The method of claim 7 further comprising the steps of processing consolidated bids to determine the selling price including the steps of:

20 -calculating a starting revenue by multiplying the highest price bid times the number of items wanted;

- calculating a comparative revenue by multiplying the next highest price bid

times the number of items wanted by both the highest and next highest bidders;

- iteratively performing calculations with each bid in descending price order to determine the revenue realized by the next lowest price times the sum of the items required by the bidder of the next lowest price and all preceding higher bidders;

5 - determining from the calculated revenue figures the optimum selling price and number of units to be sold to realize the maximum revenue.

16. The method of claim 8 further comprising the steps of processing consolidated bids to determine the selling price including the steps of:

10 - calculating a starting revenue by multiplying the highest price bid times the number of items wanted;

 - calculating a comparative revenue by multiplying the next highest price bid times the number of items wanted by both the highest and next highest bidders;

15 - iteratively performing calculations with each bid in descending price order to determine the revenue realized by the next lowest price times the sum of the items required by the bidder of the next lowest price and all preceding higher bidders;

 - determining from the calculated revenue figures the optimum selling price and number of units to be sold to realize the maximum revenue.

17. The method of claim 9 further comprising the steps of processing consolidated bids to determine the selling price including the steps of:

20 - calculating a starting revenue by multiplying the highest price bid times the number of items wanted;

 - calculating a comparative revenue by multiplying the next highest price bid

times the number of items wanted by both the highest and next highest bidders;

- iteratively performing calculations with each bid in descending price order to determine the revenue realized by the next lowest price times the sum of the items required by the bidder of the next lowest price and all preceding higher bidders;

5 - determining from the calculated revenue figures the optimum selling price and number of units to be sold to realize the maximum revenue.

18. The method of claim 3 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

10 19. The method of claim 4 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

15 20. The method of claim 5 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

21. The method of claim 6 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

20 22. The method of claim 7 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

23. The method of claim 8 comprising the further step of determining if the

auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

24. The method of claim 9 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

25. The method of claim 10 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

26. The method of claim 11 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

27. The method of claim 12 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

28. The method of claim 13 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

29. The method of claim 14 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

30. The method of claim 15 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step

of determining a cost function to be included in subsequent calculations.

31. The method of claim 16 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

5 32. The method of claim 17 comprising the further step of determining if the auction results are to be optimized for seller profit rather than revenue, and if so, the step of determining a cost function to be included in subsequent calculations.

33. The method of claim 8 further comprising the step of comparing the total number of items available to that required to supply all bidders that bid at or above the optimum selling price to determine if there are additional items available for sale, and if so processing bids made at market.

34. The method of claim 16 further comprising the step of comparing the total number of items available to that required to supply all bidders that bid at or above the optimum selling price to determine if there are additional items available for sale, and if so processing bids made at market.

35. The method of claim 23 further comprising the step of comparing the total number of items available to that required to supply all bidders that bid at or above the optimum selling price to determine if there are additional items available for sale, and if so processing bids made at market.

20 36. The method of claim 33 further comprising the step of processing at market bids to determine if there are sufficient items available to supply all the at market demand, and if not, further comprising the step of applying the selected prorationing

scheme.

37. The method of claim 34 further comprising the step of processing at market bids to determine if there are sufficient items available to supply all the at market demand, and if not, further comprising the step of applying the selected prorationing scheme.

38. The method of claim 35 further comprising the step of processing at market bids to determine if there are sufficient items available to supply all the at market demand, and if not, further comprising the step of applying the selected prorationing scheme.

39. A method of using a computer system and a communications network for facilitating a transaction between at least one seller and at least one buyer, including the steps of: submitting a sales offer for items to be sold; submitting at least one price bid from at least one buyer; determining from the submitted bids a sales price to reach the maximum profit; and selling items to the buyers offered a bid price which is equal or higher than the determined sales price, wherein the items are sold to said buyers for the same sales price.

40. The method of claim 39, further including the steps of: sorting the submitted bids from high to low based on the respective bid prices; generating a sequence of cumulated bid quantities; multiplying of each element of said sequence of cumulated bid quantities and the respective bid amount to generate to sequence of bid revenues; and selecting the highest revenue from the sequence of revenues to determine the respective bid price as the sales price.

41. The method of claim 40, wherein at market bids are accepted, comprising the step of comparing the total number of items available to that required to supply all bidders that bid at or above the optimum selling price to determine if there are additional items available for sale, and if so processing bids made at market; further including the steps of: sorting the submitted bids from high to low based on the respective bid prices; generating a sequence of cumulated bid quantities; multiplying of each element of said sequence of cumulated bid quantities and the respective bid amount to generate to sequence of bid revenues; and selecting the highest revenue from the sequence of revenues to determine the respective bid price as the sales price.

42. The method of claim 40, further including the step of determining a cost profile and including the cost profile in the calculations to generate a sequence of bid profits; and selecting the highest profit to determine the sales price.

43. The method of claim 41, further including the step of determining a cost profile and including the cost profile in the calculations to generate a sequence of bid profits; and selecting the highest profit to determine the sales price.

44. The method of claim 42 further comprising the steps of determining a prorationing scheme; processing at market bids to determine if there are sufficient items available to supply all the at market demand, and if not, further comprising the step of applying the selected prorationing scheme.